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# KING'S FRUIT TREE BULLETIN

PUBLISHED IN THE INTEREST OF BETTER FRUIT

VOLUME III.

DANVILLE, N. Y., JANUARY, 1914

NUMBER 1

## Specifications for Successful Fruit Growing

### THE SITE

All subsequent efforts fail if a mistake is made in selecting the site for operations. In growing fruit for the market certain economic considerations imperatively demand attention; as distance to market, means of transportation, labor, storage, competition, disposition of by-products, cost of production, and over-production. Any of these may prove a determinant of success. "The weakest goes to the wall" applies in the business of growing fruit as well as in other business enterprises. In growing fruit for home use, these economic factors may be ignored. There are natural factors, however, which must be observed in growing fruit for either home or market.

The first of these is latitude. A man must select fruits, and even more particularly varieties, with reference to latitude and its equivalent, altitude. It is easy enough to select the fruit for a region in a certain altitude or latitude but it is far from easy to select the varieties of a particular fruit. Thus, the Ben Davis, Winesap, Romanite and York Imperial groups of apples belong in southern latitudes, while the Concord grape and its seventy or more named offspring belong to the North. So with all varieties of our fruits; they are either northerners or southerners and should be grown where they belong. Still the metes and bounds of latitude may be set aside by such local modifications as hills, valleys, bodies of water, direction of winds and distribution of sunshine.

### SOILS

The soil largely determines the value of a location for a fruit plantation. Special fruits have special soil adaptations: The peach grows on sand; the plum on clay; apples and pears on loams. Individual varieties of any fruit also do better in some soils than in others. The fruit-grower must discover what these preferences are. The chemist can help but little here; in most cases an actual test in the field is the only way of knowing whether a variety will or will not thrive in a soil. One property of the soil is too often neglected; namely, its heat-retaining properties. Some fruits, as the peach and the grape, require warm soils; apples and pears will thrive in

By Professor U. P. Hedrick  
*Horticulturist—N. Y. S. Agricultural Experiment Sta.*

cooler lands, but, in general, a cold heavy, close soil is a poor one for any fruit.

### VARIETIES

What varieties shall I plant? This question we have touched upon in previous paragraphs and it only remains here to be said that out of

name and free from pests. Other things being equal, a short, stocky tree is better than a tall, spindling one; one with many branches, better than one with few; and always the root system should be well developed.

### "PEDIGREED" TREES

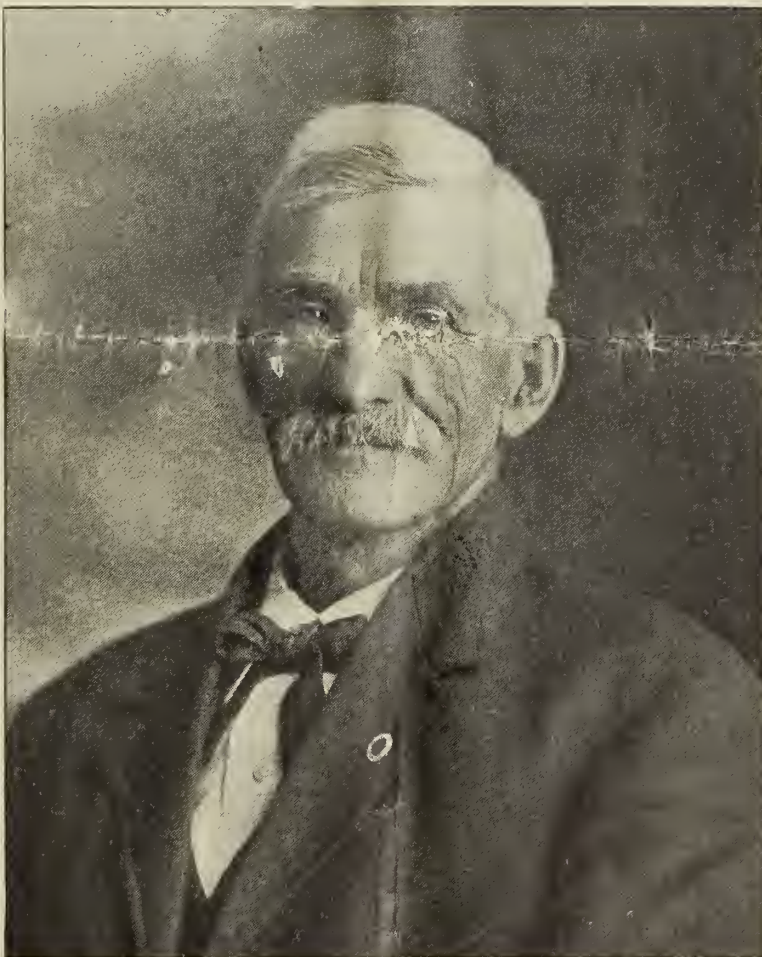
The idea is current that fruits can be improved by bud-selection. It is held that the variations in fruit, tree, productiveness, vigor and hardiness to be found in varieties of fruit, can be reproduced by taking scions or buds from the plants possessing the variations. Nurserymen are putting this theory in practice and trees are now offered for sale with a "pedigree" to show that they came from "good" ancestry. But there is no evidence that any sort of fruits has come into existence by continuous selection; that any variety has been improved through the cumulative action of selection. No experimental evidence has been offered to prove that varieties of fruit can be changed in the least by continuous bud selection. Fruit-growers should steer clear of "pedigreed stock" and "improved strains" of varieties until the new production can be seen somewhere by competent judges growing side by side with the parents.

### STOCKS

Apples may be bought upon Paradise, Doucin, or homegrown or French-grown standard stocks. The first two named are suitable only for the amateur, and, of the standards, those on the foreign seedlings are usually much the better. Pears are grown as standards on French seedlings or as dwarfs on the Angers quince. The dwarfs are gradually going out of vogue. The peach should be worked upon seedlings from southern pits and not upon those from cannery seeds. Sour or sweet cherries on Mazzard stock are far superior to those on the Mahaleb stock. Plums are grown upon several stocks and no one seems to know which are the best for the several species of this fruit, the different types of soil, and the hundreds of varieties.

### THE PLAN

How the orchard is to be laid out—in squares, quincunxes, hexagons, with or without fillers,  
(To be continued on page 10)



*Martin King, Senior*

One of the oldest nurserymen in America. He has grown hundreds of thousands of trees with his own hands and trained scores of young men who are now successful, independent growers of nursery stock. He started the movement that has made Danville the largest nursery center in the United States.

the thousands of varieties of the several fruits even the few best ones may be most readily characterized by their faults—showing how necessary it is to make careful choice of varieties. An intimate first-hand knowledge of varieties in the planter's own locality is the only way to become competent to choose the sorts to plant. Consideration will in most cases lead him to choose standard varieties.

### TREES

It is as difficult to select trees as it is to make a choice of varieties. Every precaution should be taken in buying to insure trees true to



# Guaranteed Fruit Trees

A leading agricultural paper, Farm and Home, had this startling editorial in its issue of Dec. 15th, 1913:—

## Warning Nursery Stock Buyers

Wrong—No. 1. "Any stock which does not prove to be true to name as labeled is to be replaced free or purchase price refunded."

Right—No 2. "For any stock which does not prove true to name as represented by the seller and as bought by the purchaser, the seller is to make good the buyer's loss or damage by reason thereof, at any time within ten years of the date of purchase."

In event the two parties hereto cannot agree, they should each appoint one arbiter, who shall choose the third, and the award of a majority shall be binding upon both parties."

Now, gentlemen, I do not care from whom you receive a catalog of trees, even if it has a glowing red, white and blue cover supposed to represent fruit, and strong talk by a firm who claims to have been established for years and years and who give you a big discourse about how their trees are propagated from scions of merit and bearing orchards of superior strain, be sure to look this catalog over carefully and see if you can find *Clause No. 1*. If it has this clause in fine print or some thing like it, then you receive no guarantee when you buy trees of that firm. Listen further to what this leading farm paper says:

"The above clause, No. 1 in fine print, is in almost every nurseryman's contract, though you may not know it. You buy the trees believing them to be true to name as represented. Not until you have spent several years of time, money and use of land, may you discover that the trees are not true to name, are not what you thought they were, and even may be worthless to you. Then you file your claim for damages only to have the nurseryman cite the above "saving clause," leaving you at his mercy."

In place of No. 1 clause in any contract for nursery stock, write in No. 2 as above. If the nurseryman is not willing to make such a guarantee, don't deal with him. If they all refuse, have your legislature enact a law that

By Martin King, Jr.



shall be fair to both, and we will try to get a similar statute enacted by congress to cover interstate traffic in nursery stock."

## KING BROTHERS NURSERIES WRITE CLAUSE NO. 2.

And why do we do it and how can we do it? Now listen to me, please. You may have no idea of how the nursery business is conducted. I live in a town where 20,000,000 fruit trees are growing. We grow trees by the 100,000 ourselves. I have budded over 1,000,000 trees with my own hands in my life time—80,000 per season for the past fourteen years. In 1878 my father left the employ of a large nursery concern then in this town and invested his little savings in a small planting of fruit tree seedlings. His fellow workmen told him he was mad: "Why," they said "How can you ever sell the trees after you grow them? Who will buy trees of you?" But this talk did not change his purpose. He started a movement that today makes Dansville different from any nursery town in the United States. While one or two big companies control the whole business in other sections, in Dansville there are 125 independent concerns, most of them young men who started with very limited

capital. Trees go out of here at wholesale by the tens of car loads every fall and spring to the big retail nurseries throughout the country.

Now, Gentlemen, the time has come for a new movement. The times have changed. The handwriting is upon the wall. The demand of every fruit grower is that he be guaranteed absolutely by the nurseryman in case the trees bought do not turn out as represented when they come to bearing. The time will come and it is nearly here now when no nurseryman will be allowed to do an interstate business who does not give such a guarantee. We cannot compete in price with cheap trees handled and packed by the thousands in a hurry by cheap labor and do this. We must have a fair price for our stock so that only skilled labor be employed and every precaution taken to send out trees that are right. Our success in this great movement, friends, depends on you. We are the first nursery firm in the United States, that I know of, to give you this absolute guarantee. The others will have to follow in time as surely as Martin King sold his trees contrary to the prediction of his fellow workmen in 1878.

Every horticultural meeting in the country is discussing this question of guaranteed trees. The Rural New Yorker and other leading farm papers are voicing the demand of fruit growers in this matter and soon the legislatures of the different states will be at work on the problem.

Don't ask us to cut our prices. Send us your order early in the season so we will not be crowded in March and April. Every dollar we possess, every tree we have growing, and above all our reputation for reliability and honesty for thirty-five years is at stake. We will more than make good in the coming years with your co-operation.

We have thousands of trees to sell this year but the particular variety you want may be all sold if you delay. If we can't fill your order complete, we will fill what we can of it and send you back the balance of your money.

Don't buy a tree of an agent or catalog firm unless they write the kind of guarantee that "Farm and Home" suggests and King Brothers Nurseries stand ready to give you.

## Sample Letters from Our Customers in 1913

May 8th, 1913.

Martin King, Jr.,

Care King Bros.,

Dear Sir—I beg to acknowledge the receipt of my order of two hundred Plum, Pear, Peach and Apple Trees by express, and must say that they are first class in every respect, and are better than I had anticipated. The expressage on the order was \$8.48 but I consider the money well spent, as it gave us a chance to get them from four to seven days earlier, than it would have been possible by freight.

In my opinion that means 100 per cent are most likely to grow. Two years ago I had my trees sent by freight from —Nursery, (Rochester,) and 50 peach trees were practically dead on arrival (they were 12 days on the road) and the small fruits were worthless, all the stock having heated in the box. I went to the expense of planting them and only one peach started above the bud.

The adjustment of the loss to me was not satisfactory, hence the order this year came to you, and is all that a purchaser could desire. If they don't grow it will be my fault not yours. They are all planted, and are starting nicely. If this letter or any part of it is of use to you

in your business, you are at liberty to use it.

I am,  
Yours respectfully,  
Edward S. Cave.

The Ranch,  
Hollis, N. H.

Dec. 18th, 1913.

Mr. Martin King, Jr.,

Dear Sir—In answer to your inquiry of Dec. 12th in regard to the trees bought of you last spring, will say that they have grown exceedingly well considering the dry season we had and are perfectly satisfactory in every respect. This young orchard belongs to my son, he has now some 500 trees.

Perhaps you would like to know how we planted and cared for them. In the first place we intended to use dynamite to blow the holes and ordered 50 pounds of 25 per cent for the purpose, but we did not get it in time to use, so we had to dig the holes. We dug 4 feet in circumference and 18 inches deep, not that it requires so large a hole to plant the tree but for the benefit of the roots for future use. We put the first 9 inches of top soil in one pile, and the bottom 9 inches in another pile. Before putting the tree in position we put some of the top soil in

the bottom of the hole, to bring the tree up to the proper depth for planting, then placed the tree and filled in first with the balance of the top soil, and then the bottom soil on top. We used a post hole rammer and pounded the soil solid about the roots to exclude the air as we filled the holes, except about 2 inches on the top which we left loose as a mulch. After all the trees were planted we mulched them with a strawy manure (well rotted) about 4 inches deep to conserve moisture and that is all the care they will get until next spring when we expect to dig in the old mulching, and add one pound per tree of a mixture of nitrate of soda, potash and acid phosphate and repeat the mulching with rotten manure. We do not know if this is the proper method of planting. The trees are planted in sod and we figure that this method will save us a lot of team work and give us a crop of hay until the trees want to use the land. This may not be in accordance with the best methods of growing an orchard but this plan seemed to be the best in our case, as this was a badly run down farm when I purchased it in 1909. There is one thing it proved to me, that the land is good but very poor in fertility, as around the trees the timothy grew nearly 4 feet tall and the

balance about 2 feet tall. We expect to add to this orchard each year as we can care for them until this 10-acre piece is in apples, when the peaches are no longer useful. We do not know at present how many trees we shall want in the spring but will let you know as early as possible. Two of my neighbors want to send their order in with mine, so when I know what they want will write you.

Very respectfully,  
Edward S. Cave.

P. S. There were from 10,000 to 15,000 barrels of apples grown in Hollis this year.

Athens, Wis., April 12, 1912.  
King Brothers Nurseries,  
Dansville, N. Y.

Dear Sirs:—The trees you sent to my address have been received. Didn't expect any trees of this size.

Please accept my hearty thanks for same. As Baldwin apples are not found here I shall watch results and report how they come through.

We still have four inches of snow and frost is not out of ground.

Have trees in a safe place so that I can plant them when milder weather sets in.

Yours truly,  
C. A. Eickemeyer.



## An Expression of Appreciation to Our Customers

THE dawning of the year 1914 shows our nursery business in a flourishing condition. We have more trees than ever before and more friends than ever before in our history.

No business can be conducted on a permanent basis that does not give satisfaction to those who buy its goods. In the mail order nursery business especially, this holds true. Satisfied customers are the best advertisement and the best asset any nursery firm can have. A man who buys trees of a nurseryman and finds them satisfactory will come back again and bring his friends and neighbors.

We owe our success in the past to you. We thank you for your liberal patronage and for the many large buyers you have directed to us. We hope that all the trees we have sold you are in a flourishing condition and that they will be your delight for all the years and yield you abundant harvest.

We want you to know that our success for the coming years will depend entirely upon you and the word you continue to send forth in the land about us. Confident that we will satisfy you even more fully in the future than in the past, we are increasing heavily our plantings of seedlings. We have the finest land and climate for it in the world (over 20,000,000 trees are growing in Dansville now). We are studying and planning to remain the leaders in using the best and most valuable methods both for growing and for selling our trees. We have the practical experience of over thirty-five years to guide us. We have you to buy our stock.

We are always glad to hear from you and we wish you would write us during the early winter, just to let us know how all your plantings are doing and whether or not you will set some more in the spring.

King Brothers Nurseries, Dansville, N. Y.

## My Baldwins and How I Grow Them

By H. T. Taplin, Newfield, N. H.

NOT so very many years ago there came a cry from the far west that fruit-growers in that part of the country were raising some wonderful apples. Soon those wonderful apples began to show up in our eastern markets. The attractive manner in which they were put up and their beautiful appearance created an instant demand for them at very remunerative prices. Consumers professed to believe that nothing ever was or could be produced that would equal those wonderful western apples. But eventually, after repeated comparisons and tests, it gradually simmered through the brains of eastern fruit-growers, that right here, on the bleak hills of Little Old New England, apples could be grown that in the way of rich, juicy flavor would put the western product on the blink every time. With the obtaining of this knowledge we eastern chaps, myself among the number, became possessed of an ambition to learn how to market our apples in a manner that would put a wet blanket on the extensive monopolization of our best markets by western growers. The first thing, was to ascertain the best methods of cultivation and fertiliza-

tion. I adopted "sod culture" for, ingrowing Baldwins this way, more attractive coloring, better flavor and prolonged keeping qualities are obtained than by any other method. The Baldwin tree, when it does get on to its job, is so extremely productive that it is inclined to rest up a year and act the part of a biennial producer. I believe, however, that the "off year" problem can in a measure be obviated by judicious fertilization and summer pruning. Where the orchard is in a good state of thrift, as relates to the growth of wood tissue, I would not apply stable manure in which nitrogen strongly predominates as what the orchardist demands is not firewood but a crop of good fruit.

The best fertilizing element of a unit nature I consider to be good ground bone, which contains from three to four per cent of nitrogen and a large percentage of phosphoric acid, all available by degrees. Phosphoric acid is a mighty impelling force as relates to fruit production. To make sure that my orchards will not hunger for any special article of diet, I



apply the different fertilizing elements needed in the shape of ground bone, potash, acid phosphate and lime. In the endeavor to break the orchard of the habit of "going on a strike" every other year, I apply the fertilizers the year that the trees feel an impulse to do their duty. This allows them time to assimilate with the soil and become available the following year. Indirectly, at the start the "brown-tail moth" was an important adjunct in the endeavor to grow quality apples as few realized the importance of spraying and were surprised to note that in putting the "pesky varmints" out of commission, the quantity and quality of fruit was increased at least 100%. We could now cheerfully dispense with their assistance.

After learning how to grow quality apples, came the proposition of how to put up the apples and place them on the market in a manner so attractive as to interfere with the consumers regard for the western fruit. With me the "tug of war" came when I took to boxing my apples. There was no one available to show me how but I kept at it until I got the trick down pat. Now, I had almost rather box apples that eat honey (I like bee nectar too). Now as to results: my first size "Fancy Baldwins" retail at \$2.00 per box. I have quite an extensive private trade, having customers in several states beside my own. I sell to "fruit stores," and side by side with

western apples consumers buy my Baldwins from choice.

With the enterprising orchardist, there is a continuous demand for young trees to fill vacancies and plant new orchards. Consequently it is important to know where healthy young trees may be obtained. Avoid the unknown "tree agent" as you would a pestilence. Be chary of giving too much credence, to extravagant claims made by some firms as to the great superiority of new varieties. A tree may produce excellent fruit and yet on account of undesirable characteristics as to growth, etc., be utterly valueless as an orchard proposition. Procure trees direct from a firm that has a reputation to maintain. Don't expect any nursery to guarantee trees to live under adverse conditions such as extreme drouth, poor planting and little or no care afterward. For the main crop in New England, I would advise planting the good old Baldwin. I believe it to be the best all round apple in the world. If desirable to prolong harvest time, plant, in lesser quantities, Duchess, Gravenstein, Wealthy and McIntosh. These are all standard apples suitable to the climate and command good prices.

I am approaching the "three score years and ten" guide post in life's journey but every year I plant trees. I love to experiment with them and watch their development.

## Seven Reasons why you Should Deal With King

1st.—Kings are located in the garden of America. The Upper Genesee Valley grows the best trees in the world.

2nd.—King's make all freight shipments from Dansville over The Delaware, Lackawanna & Western R. R., the fastest railroad in the world—a direct route to Michigan, Ohio, Indiana and Western Points—Four days to New England—Rapid transfers to railroads running into Pennsylvania and Southern Points.

3rd.—King's are the leaders in adopting the best methods of growing and selling trees.

4th.—King's Fruit Tree Bulletin tells you the truth about trees and varieties.

5th.—King's have been established in Dansville for over thirty-five years, and their reputation for square dealing is country wide.

6th.—King's prices are the lowest, considering the quality of their trees, of any nursery firm in the land.

7th.—King's are the first nurseries in America to give fruit growers an absolute guarantee of genuineness of varieties.

## The Apple Orchard

From 1900 to 1910 more than 50,000,000 apple trees have gone out of existence and the loss in dollars and cents amount to over \$65,000,000. On the other hand, our population is increasing by leaps and bounds.

The vast number of immigrants who have come here from Southern Europe are great lovers of fruit, and this of necessity will tend to create an ever increasing demand in this country for fruit of all kinds. The market for apples, therefore, is rapidly expanding.

In view of these facts it is reasonable to conclude that the profits from good apple orchards, well cared for, will be even greater in the future than they have been in the past.



## CATALOGUE OF

# King Brothers Nurseries

## DANSVILLE, NEW YORK

Description of all the varieties of fruit trees and small fruits that we grow and sell, giving their form, size, color, quality, use and season of ripening together with recommendations of varieties for cultivation in different sections of the country, compiled by America's leading orchardists and horticultural experts under the direction of the American Pomological Society.

NOTE:—Find, from the following description, the district in which you intend to plant trees. Then, in studying the table of fruits, look for the marks after a variety in the column that indicates your district. Varieties known to succeed in a given district are indicated by a cipher 0; if highly successful by two ciphers 00; if considered promising by a dagger †; if not reported on by a dotted line ....

**District No. 1**—Maine above 500 feet elevation; New Hampshire, Vermont and New York north of latitude 44°; Ontario north of Lake Simcoe and east of longitude 80°; Quebec, New Brunswick, and Prince Edward Island. The dominant natural feature of this district is the St. Lawrence Valley. Many of the hardier fruits flourish within its borders.

**District No. 2**—Nova Scotia; Maine below 500 feet elevation; New Hampshire and Vermont south of latitude 44°; Massachusetts; Rhode Island; Connecticut; New York south of latitude 44°, except Long Island, northern New Jersey above 500 feet elevation; Pennsylvania east of the Susquehanna River and above 500 feet elevation, north of latitude 41° west of the Allegheny River, and all of that portion of the State lying north of the Ohio River; Ohio and Indiana north of latitude 40°; the lower peninsula of Michigan; and Ontario south of Lake Simcoe. The Annapolis Valley of Nova Scotia, the North Atlantic coast, the lake region of Western New York, Ohio, Ontario, and Michigan, and the Hudson River Valley are the leading features of District No. 2. This may be considered the northern grape, peach, and winter-apple district.

**District No. 3**—Long Island; New Jersey, except a small portion north; eastern Pennsylvania below 500 feet elevation; Delaware; and Maryland and Virginia below 500 feet elevation. This is the Delaware and Chesapeake Bay district. Though a small district, its productive capacity of the fruits that succeed within its borders is great.

**District No. 4**—Pennsylvania above 500 feet elevation and south of latitude 41°; Maryland, Virginia, North Carolina, South Carolina, Georgia, Mississippi, and Alabama above 500 feet elevation; West Virginia; Tennessee and Kentucky; Ohio and Indiana south of latitude 40°; southern Illinois below the general elevation of 500 feet, from the Wabash to the Mississippi; Missouri south of a line from near St. Louis and along the elevation of 1,000 feet to the southeast corner of Kansas; Oklahoma below 2,000 feet elevation; and Arkansas north of latitude 35°, also south of it wherever the elevation exceeds 500 feet. The Allegheny and the Ozark mountains and the valleys of the Ohio, the Tennessee, and the Cumberland and portions of the Wabash, the Mississippi, and the Arkansas rivers are embraced within this district. Portions of it are noted fruit regions, while throughout its vast territory the hardier deciduous fruits flourish. Many of the varieties recommended succeed best in certain localities within the district. An exception to the general character of the district occurs in those portions of Kentucky, Tennessee, Arkansas, and southeastern Missouri lying near the Mississippi River, where varieties adapted to culture in districts 5 and 7 generally succeed.

**District No. 5**—Eastern North Carolina, South Carolina, and Georgia below 500 feet elevation; and Florida north of latitude 30° east of the Chattahoochee River and above 100 feet elevation. This district embraces the southern Atlantic seaboard, with its many frith-like indentations and valleys. The climate is generally mild, and within its borders many of the more tender deciduous fruits flourish.

**District No. 6**—Florida south of latitude 30°, the remaining portions of the State with elevations below 100 feet, and those portions of Alabama, Mississippi, Louisiana, Arkansas, and Texas lying below the 100-foot contour line as it skirts the coast from Florida to the Rio Grande. This is the southern peninsula and the Gulf Coast district. The successful culture of citrus and other subtropical fruits and nuts is restricted to the peninsula portion of Florida and to the Delta of the Mississippi. Tropical species are only recommended for that portion of Florida lying south of latitude 27°, and are indicated by the letter s in connection with the starring.

**District No. 7**—Florida west of the Chattahoochee River and above 100 feet elevation; Alabama, Mississippi, Louisiana, and Arkansas above 100 and below 500 feet elevation; and Texas south of Red River and above 100 and below 1,000 feet elevation. This may be denominated the valley district. It embraces portions of the Chattahoochee, Alabama, Pearl, Mississippi, Arkansas, Red, Sabine, Colorado, and Rio Grande valleys. The climate in the eastern and larger portion is warm and moist, in the extreme west more dry and tending toward aridity. A wide range of the more tender varieties and species is adapted to culture in this district.

**District No. 8**—Illinois north of the 500-foot contour line as it crosses the State between 38° and 39° latitude; a very small portion of southwest Wisconsin; Iowa south of about latitude 42° 30'; the Missouri River Valley portion of southeastern South Dakota; Nebraska and Kansas below 2,000 feet elevation; and Missouri north of a line drawn from near St. Louis and along the elevation of 1,000 feet to the southeast corner of Kansas. The Missouri and Mississippi valley sections of the district are its dominant features. The hardy deciduous fruits succeed in most portions, and commercial fruit growing is a rapidly developing industry.

**District No. 9**—Wisconsin except the small southwest corner; Minnesota; upper Michigan; Iowa north of about latitude 42° 30'; North and South Dakota east of longitude 99° and Canada west of longitude 80° and east of longitude 99°. This district embraces the upper lakes, including Winnipeg the upper Mississippi and the Red River valleys. Only the hardier fruits succeed, but fair progress has been made in recent years in developing varieties adapted to this region.

## Apples

[KEY.—Abbreviations used in the descriptions of varieties. *Form*: c, conical; o, ovate; ob, oblate; obl, oblong; r, round. *Size*: l, large; m, medium; s, small; v, very. *Color*: b, blushed; c, crimson; d, dark; g, green; p, pale; r, red; ru, russet; s, striped; w, white; y, yellow. *Flavor*: a, acid; b, brisk; m, mild; p, pleasant; r, rich; s, sweet; sa, subacid; v, very; vi, vinous. *Quality*: b, best; g, good; p, poor; v, very. *Use*: c, cider; d, dessert; k, kitchen; m, market. *Season*: e, early; l, late; m, medium; v, very. Varieties known to succeed in a given district are indicated by a cipher (0); if highly successful by two ciphers (00); if considered promising by a dagger (†); if not reported on by a dotted line (.....).

NAME	Description							Recommendations for the Several districts								
	Form	Size	Color	Flavor	Quality	Use	Season	1	2	3	4	5	6	7	8	9
Akin.....	c	ml	yr	sa	vg	dm	l	.....	+	.....	.....	.....	.....	.....	.....	.....
Alexander.....	rc	vl	gyrs	a	g	km	l	00	00	0	0	.....	.....	.....	.....	.....
Arkansas.....	obl	l	yr	msa	vg	km	l	.....	0	0	00	.....	.....	.....	00	.....
Baldwin.....	rc	ml	yr	sa	vg	dkm	l	00	00	0	0	.....	.....	.....	.....	.....
Banana.....	ob	m	yb	msa	vg	d	l	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ben Davis.....	robl	ml	yr	sa	g	m	l	.....	.....	.....	.....	.....	.....	.....	.....	.....
Benoni.....	robc	ms	yr	msa	vg	d	me	.....	0	00	00	.....	.....	.....	00	0
Bietigheimer.....	obc	vi	wyrs	sa	g	km	me	0	0	0	0	.....	.....	.....	.....	.....
Bough.....	obl	ml	gy	s	vg	dk	e	.....	00	00	.....	.....	.....	.....	.....	.....
Chenango.....	obl	m	wrs	sa	vg	dm	me	.....	00	00	.....	.....	.....	.....	.....	.....
Delicious.....	obl	ml	yr	msa	vg	dm	l	.....	.....	.....	.....	.....	.....	.....	.....	.....
Early Harvest.....	rob	m	py	sa	vgb	dk	ve	0	0	00	00	0	0	.....	.....	.....
Early Strawberry.....	rc	s	rs	sa	vg	dm	e	0	00	0	0	.....	.....	.....	.....	.....
Esopus.....	robl	l	yr	sa	vgb	dkm	me	.....	00	.....	.....	.....	.....	.....	.....	.....
Fall Pippin.....	robl	vl	gy	psa	gvg	dkm	m	0	0	0	0	.....	.....	.....	.....	.....
Fameuse.....	rob	ms	gyrc	sa	vgb	dkm	me	00	00	.....	.....	.....	.....	.....	.....	.....
Gano.....	roh	l	dys	msa	g	m	l	.....	0	0	00	.....	.....	.....	00	00
Golden Russet.....	rob	m	gyru	a	gb	dkm	l	0	00	.....	.....	.....	.....	.....	.....	.....
Gravenstein.....	rob	l	yr	sa	vg	km	m	00	00	00	.....	.....	.....	.....	.....	.....
Grimes.....	rob	m	yrs	sa	vgb	dkm	ml	0	00	00	00	0	.....	.....	00	00
Hubbardston.....	robl	l	yr	sa	vg	dk	ml	0	00	0	0	.....	.....	.....	.....	.....
Jonathan.....	robl	m	yrsb	msa	vgb	dkm	ml	.....	00	00	.....	.....	.....	.....	00	0
Livland Raspberry.....	obl	m	yr	msa	vg	dm	me	00	.....	.....	.....	.....	.....	.....	.....	00
McIntosh.....	rob	ml	wyrs	a	gvg	dkm	ml	00	00	0	0	.....	.....	.....	.....	00
Maiden Blush.....	rob	m	pyb	sa	g	dkm	m	.....	00	00	00	.....	.....	.....	00	0
Northern Spy.....	robc	l	gyrs	sa	vgb	dkm	l	00	00	0	0	.....	.....	.....	.....	.....
Northwestern.....	r	l	yg	sa	g	m	ml	.....	.....	.....	.....	.....	.....	.....	.....	00
Ohio Nonpareil.....	rob	ml	yr	sa	vg	dkm	m	.....	0	0	.....	.....	.....	.....	.....	.....
Oldenburg.....	rob	m	wyrs	ba	g	km	me	00	00	00	.....	.....	.....	.....	00	00
Rambo.....	rob	m	ywrs	rmsa	vg	dk	m	.....	0	0	00	.....	.....	.....	.....	.....
Red Astrachan.....	rc	ml	gyrc	a	gvg	dkm	e	00	00	00	00	0	0	0	0	0
R. I. Greening.....	robc	l	pyg	ba	vg	dkm	ml	00	00	.....	.....	.....	.....	.....	.....	.....
Rome Beauty.....	robc	l	yr	sa	vg	dm	ml	.....	0	00	00	.....	.....	.....	.....	.....
Roxbury.....	rob	ml	yru	pa	gvg	km	vl	0	00	0	0	.....	.....	.....	.....	.....
Smokehouse.....	rob	ml	yrcs	sa	g	km	ml	.....	0	00	0	.....	.....	.....	.....	.....
Stark.....	rc	l	gyrs	msa	g	km	l	0	0	0	0	.....	.....	.....	.....	.....
Stayman Winesap.....	obc	ml	gyrs	rmsa	vg	dm	l	.....	.....	00	00	0	.....	.....	.....	.....
Sutton.....	robc	ml	pyrcs	sa	vg	dkm	ml	0	0	0	0	.....	.....	.....	.....	.....
Tetofski.....	robc	ms	yr	a	g	km	me	00	0	.....	.....	.....	.....	.....	.....	00
Tolman.....	rc	m	wyb	s	vg	dk	vl	00	00	.....	.....	.....	.....	.....	.....	0
Tompkins King.....	obrc	l	yr	sa	vg	dm	l	0	00	0	0	.....	.....	.....	.....	.....
Twenty Ounce.....	rc	vl	gyrs	psa	gvg	vg	ml	0	0	0	0	.....	.....	.....	.....	.....
Wagener.....	rob	ml	yrcs	bsa	vgb	dkm	l	0	00	.....	.....	.....	.....	.....	.....	.....
Walbridge.....	obc	m	wyrs	sa	g	.....	vl	.....	.....	.....	.....	.....	.....	.....	.....	.....
Wealthy.....	rob	m	wrcs	bsa	vg	dm	m	00	00	00	.....	.....	.....	.....	00	00
Winesap.....	robl	m	drs	msa	vg	dme	vl	.....	0	00	00	.....	.....	.....	00	0
Wolf River.....	robc	vl	gyrs	sa	g	km	ml	00	0	.....	.....	.....	.....	.....	.....	00
Yellow Newtown.....	rob	ml	gy	ba	vgb	dkm	vl	.....	0	0	0	.....	.....	.....	.....	.....
Yel. Transparent.....	robc	m	py	sa	gvg	dkm	me	00	00	00	00	.....	.....	.....	.....	00
York Imperial.....	rob	ml	wcs	sa	gvg	km	ml	.....	0	00	.....	.....	.....	.....	.....	.....
CRAB APPLES																
Grant.....	rob	l	rs	sa	.....	.....	l	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hyslop.....	rc	l	dr	sa	g	km	m	0	00	00	00	.....	.....	.....	00	00
Transcendent.....	robl	ml	gyb	sa	g	km	me	00	00	00	00	.....	.....	.....	00	00

## Cherries

[KEY.—*Form*: c, compressed; h, heartshaped; o, oblate; r, round. *Size*: l, large; m, medium; s, small; v, very. *Color*: a, amber; b, black; d, dark; p, purple; r, red; w, white; y, yellow. *Quality*: b, best; g, good; p, poor; v, very. *Use*: d, dessert; k, kitchen; m, market. *Season*: e, early; l, late; m, medium; v, very.]

HEART AND BIGARREAU																
Bing.....	vl	yl	yr	vg	dm	l	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Centennial.....	oh	vl	yr	vg	dm	l	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lambert.....	h	l	pr	vg	dm	ml	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Napoleon.....	h	l	yr	gvg	m	m	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Rockport.....	oh	l	ra	vg	dm	m	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Smith.....	oh	vl	yr	vg	d	em	0	0	0	0	.....	.....	.....	.....	.....	.....
Spanish.....	oh	vl	yr	vg	d	em	0	0	0	0	.....	.....	.....	.....	.....	.....
Tartarian.....	h	l	b	vgb	dm	em	0	00	0	0	00	.....	.....	.....	.....	.....
Windsor.....	h	ml	yr	gvg	dm	l	0	0	0	0	.....	.....	.....	.....	.....	.....
Wood.....	rh	ml	yr	vg	dm	em	00	00	0	0	.....	.....	.....	.....	.....	.....

## DUKE AND MORELLO CHERRIES

DUKE AND MORELLO CHERRIES																
Baldwin.....	r	m	dr	g	k	me	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Dyehouse.....	ro	m	r	g	k	ve	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
L'ge Montmorency.....	ro	ml	r	vg	km	em	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
May Duke.....	rb	ml	r	vg	dk	em	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Montmorency.....	r	l	r	vg	km	em	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Morello.....	rh	ml	rb	g	km	l	0	00	00	00	00	.....	.....	.....	.....	.....
Olivet.....	r	ml	r	g	dk	e	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ostheim.....	r	ml	rb	g	dkm	m	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Richmond.....	r	m	r	g	km	m	00	00	00	00	00	.....	.....	.....	.....	.....

## Pears

[KEY.—*Form*: i, irregular; o, oblate; obl, oblong; obo, obovate; obt, obtuse; ov, ovate; p, pyriform; r, round; t, turbinate. *Size*: l, large; m, medium; s, small; v, very. *Color*: b, brown; c, crimson; g, green; o, orange; r, red; ru, russet; w, white; y, yellow. *Quality*: b, best; g, good; p, poor; v, very. *Use*: d, dessert; k, kitchen; m, market. *Season*: e, early; l, late; m, medium; v, very.]

Angouleme.....	obtp	vl	gyru	vg	dkm	m	0	00	00	00	0	.....	0	0	0	0
Anjou.....	obltp	l	gyru	vg	dm	ml	0	00	00	0	.....	.....	00	00	0	0
Bartlett.....	obltp	l	yru	vg	dkm	m	0	00	00	00	00	.....	00	00	0	0
Clapp Favorite.....	obtp	l	yrb	g	km	m	00	00	0	0	.....	.....	.....	0	0	0
Flemish.....	obltp	l	yrb	vg	dm	me	0	0	0	0	.....	.....	00	00	00	00
Kieffer.....	rp	ml	yrb	p	km	ml	+	0	0	00	00	00	00	00	00	00
Lawrence.....	obop	m	yru	vgb	dm	l	0	00	0	0	.....	.....	.....	0	0	0
Seckel.....	rp	s	cybru	b	d	ml	.....	00	00	00	0	.....	.....	00	00	00
Sheldon.....	robt	m	gcru	vgb	dm	ml	0	00	0	0	.....	.....	.....	0	0	0
Vermont Beauty.....	obltp	l	yru	vg	d	m	00	0	.....	.....	.....	.....	.....	.....	.....	.....
Wildor Early.....	p	ms	yrb	vg	dm	me	00	0	.....	0	.....	.....	.....	.....	+	.....



## Peaches

[KEY.—Form: c, compressed; f, flat; ob, oblate; obl, oblong; ov, oval; r, round. Size: l, large; m, medium; s, small; v, very. Color: b, blushed; c, creamy; g, green; r, red; w, white; y, yellow; Adhesion: c, cling; f, free; sc, semicling. Quality: b, best; g, good; p, poor; v, very. Use: d, dessert; k, kitchen; m, market. Season: e, early; l, late; m, medium; v, very.]

NAME	Description							Recommendations for the several districts								
	Form	Size	Color	Adhesion	Quality	Use	Season	1	2	3	4	5	6	7	8	9
Alexander.....	r	m	wr	sc	g	km	ve	0	0	0	0	0	0	0	0	0
Beets.....	rob	ml	cwr	f	vg	dkm	e	00	0	0	0	0	0	0	00	0
Belle.....	r	l	w	f	g	dkm	e	0	00	0	0	00	0	0	0	0
Carman.....	r	l	w	f	g	dkm	e	0	0	3	00	0	0	0	+	0
Chairs.....	r	l	yr	f	g	km	m	0	0	0	0	0	0	0	0	0
Champion.....	r	ml	cyr	f	vg	em	m	00	00	00	0	0	00	00	0	0
Chili.....	ov	m	yr	f	g	ml	ml	0	0	0	0	0	0	0	0	0
Crosby.....	r	ml	gyr	f	g	dm	ml	00	0	0	0	0	0	0	0	0
Early Crawford.....	rov	vl	yr	f	vg	dm	me	0	00	0	00	0	0	0	00	0
Elberta.....	robl	vl	yr	f	g	km	m	00	00	00	00	00	00	00	00	0
Fitzgerald.....	ov	l	yr	f	vg	km	ml	0	0	+	0	0	0	0	0	0
Foster.....	r	ml	yr	sc	g	m	e	0	0	0	0	0	00	0	0	0
Greensboro.....	rov	l	wr	c	vg	dm	l	0	0	00	00	00	00	0	0	0
Heath.....	rov	vl	yr	f	vgb	dm	l	0	00	00	0	0	0	0	00	0
Late Crawford.....	rov	vl	l	wr	f	vg	dm	00	00	00	00	00	00	00	00	0
Mountain Rose.....	r	l	wr	f	vg	dm	em	00	00	00	00	00	00	00	00	0
Niagara.....	rov	l	cwr	f	vg	me	me	0	+	0	0	0	0	0	0	0
Oldmixon Cling.....	rov	l	cwr	c	vgb	dk	m	0	0	0	0	0	0	0	0	0
Oldmixon Free.....	rov	l	cwr	f	vg	dk	m	00	00	0	0	0	0	0	0	0
Rivers.....	r	ml	cwr	f	g	dm	e	0	0	0	0	0	0	00	0	0
St. John.....	r	ml	yr	f	g	m	m	00	0	0	0	0	0	0	0	0
Salway.....	rob	l	yr	f	g	m	l	00	0	0	00	0	0	0	00	0
Smock.....	ov	l	y	f	g	m	l	00	00	0	0	0	0	0	00	0
Sneed.....	ov	ml	gw	c	g	m	ve	0	0	0	0	0	0	0	0	0

## Grapes

## Key for Grapes, Raspberries, Blackberries, Currants and Gooseberries

[KEY.—Form: c, conical; ov, oval; ob, obtuse; obl, oblong; r, round. Size: l, large; m, medium; s, small; v, very. Color: a, amber; b, black; c, crimson; g, green; p, pale; pu, purple; r, red; w, white; y, yellow. Quality: b, best; g, good; p, poor; v, very. Use: d, dessert; k, kitchen; m, market. Season: e, early; l, late; m, medium; v, very.]

Agawam.....	ro	vl	rb	vg	dm	m	0	0	0	0	0	0	0	0	0	0
Barry.....	r	vl	b	vg	dm	m	0	0	0	0	0	0	0	0	0	0
Brighton.....	r	l	r	vg	dm	e	0	0	0	0	0	0	0	0	0	0
Brilliant.....	r	ml	r	vg	dm	e	0	0	0	0	0	0	0	0	0	0
Campbell.....	r	l	b	vg	dm	e	0	0	0	0	0	0	0	0	0	0
Catawba.....	r	l	r	vg	dm	e	0	0	0	0	0	0	0	0	0	0
Champion.....	r	m	b	g	m	m	0	0	0	0	0	0	0	0	0	0
Concord.....	r	ml	b	g	m	m	0	0	0	0	0	0	0	0	0	0
Cottage.....	r	l	b	g	m	m	0	0	0	0	0	0	0	0	0	0
Delaware.....	r	s	b	g	dm	m	0	0	0	0	0	0	0	0	0	0
Diamond.....	r	m	gw	vg	dm	m	0	0	0	0	0	0	0	0	0	0
Diana.....	ro	sm	gy	vg	d	m	0	0	0	0	0	0	0	0	0	0
Duchess.....	ro	sm	gy	vg	d	m	0	0	0	0	0	0	0	0	0	0
Eaton.....	r	l	b	g	m	ml	0	0	0	0	0	0	0	0	0	0
Empire.....	r	ms	w	vg	d	m	0	0	0	0	0	0	0	0	0	0
Gaertner.....	o	vl	yr	vg	d	me	0	0	0	0	0	0	0	0	0	0
Goethe.....	o	vl	yr	vg	d	l	0	0	0	0	0	0	0	0	0	0
Hartford.....	r	ml	b	g	m	e	0	0	0	0	0	0	0	0	0	0
Hayes.....	r	m	yw	vg	d	e	0	0	0	0	0	0	0	0	0	0
Herbert.....	r	ml	b	vg	dm	e	0	0	0	0	0	0	0	0	0	0
Iona.....	ro	m	r	vg	d	m	0	0	0	0	0	0	0	0	0	0
Isabella.....	ro	l	b	g	dm	m	0	0	0	0	0	0	0	0	0	0
Ives.....	ro	m	b	g	dm	m	0	0	0	0	0	0	0	0	0	0
Jefferson.....	r	m	r	vg	d	ml	0	0	0	0	0	0	0	0	0	0
Lady.....	r	ml	w	vg	d	me	0	0	0	0	0	0	0	0	0	0
Martha.....	r	m	yw	vg	dm	e	0	0	0	0	0	0	0	0	0	0
Massasoit.....	r	l	r	vg	dm	m	0	0	0	0	0	0	0	0	0	0
Merrimac.....	r	vl	b	vg	dm	m	0	0	0	0	0	0	0	0	0	0
Moore.....	r	vl	b	vg	dm	e	0	0	0	0	0	0	0	0	0	0
Moyer.....	r	s	r	vg	dm	m	0	0	0	0	0	0	0	0	0	0
Niagara.....	ro	l	w	vg	dm	m	0	0	0	0	0	0	0	0	0	0
Pocklington.....	r	vl	wy	g	m	em	0	0	0	0	0	0	0	0	0	0
Salem.....	r	vl	r	vg	dm	m	0	0	0	0	0	0	0	0	0	0
Triumph.....	r	l	y	vg	d	vl	0	0	0	0	0	0	0	0	0	0
Vergennes.....	o	l	r	vg	dm	m	0	0	0	0	0	0	0	0	0	0
Victor.....	r	m	b	vg	d	ve	0	0	0	0	0	0	0	0	0	0
Washington.....	r	ml	yw	vg	d	l	0	0	0	0	0	0	0	0	0	0
Wilder.....	r	vl	b	vg	dm	m	0	0	0	0	0	0	0	0	0	0
Worden.....	r	l	b	vg	dm	em	0	0	0	0	0	0	0	0	0	0
Wyoming.....	r	sm	r	g	m	m	0	0	0	0	0	0	0	0	0	0

## Raspberries

Columbian.....	r	vl	pu	g	km	e	0	0	0	0	0	0	0	0	0	0
Cumberland.....	rob	vl	b	vg	dm	e	0	0	0	0	0	0	0	0	0	0
Eureka.....	r	ml	b	g	km	m	0	0	0	0	0	0	0	0	0	0
Gregg.....	rob	ml	b	g	km	m	0	0	0	0	0	0	0	0	0	0
Kansas.....	r	ml	b	vg	km	m	0	0	0	0	0	0	0	0	0	0
Ohio.....	r	m	b	g	km	e	0	0	0	0	0	0	0	0	0	0
Cuthbert.....	rc	ml	r	vg	m	m	0	0	0	0	0	0	0	0	0	0
Golden.....	rc	ml	y	vg	dk	m	0	0	0	0	0	0	0	0	0	0
King.....	rc	ml	cr	g	dm	e	0	0	0	0	0	0	0	0	0	0
Loudon.....	rc	ml	r	g	dm	m	0	0	0	0	0	0	0	0	0	0
Marlboro.....	r	l	r	g	m	m	0	0	0	0	0	0	0	0	0	0

## Currants

Champion.....	r	vl	b	vg	km	em	0	0	0	0	0	0	0	0	0	0
Lee.....	r	ml	b	vg	km	m	0	0	0	0	0	0	0	0	0	0
Cherry.....	r	vl	r	g	m	m	0	0	0	0	0	0	0	0	0	0
Fay.....	r	vl	r	g	m	m	0	0	0	0	0	0	0	0	0	0
Perfection.....	r	ml	r	vg	dm	m	0	0	0	0	0	0	0	0	0	0
Red Dutch.....	r	ml	r	vg	dm	m	0	0	0	0	0	0	0	0	0	0
Victoria.....	r	m	r	g	m	m	0	0	0	0	0	0	0	0	0	0
White Dutch.....	r	ml	w	vg	d	m	0	0	0	0	0	0	0	0	0	0
White Grape.....	r	l	w	vg	m	m	0	0	0	0	0	0	0	0	0	0

## Gooseberries

Chautauqua.....	robl	l	gw	vg	km	m	0	0	0	0	0	0	0	0	0	0
Industry.....	rov	vl	r	vg	km	e	0	0	0	0	0	0	0	0	0	0
Downing.....	r	ml	g	g	km	m	0	0	0	0	0	0	0	0	0	0
Houghton.....	rov	s	gr	vg	dk	m	0	0	0	0	0	0	0	0	0	0
Josselyn.....	rov	ml	r	vg	km	e	0	0	0	0	0	0	0	0	0	0
Smith.....	ov	m	yg	vg	dk	e	0	0	0	0	0	0	0	0	0	0

## Blackberries and Dewberries

Agawam.....	robl	l	b	bvg	dm	ve	0	0	0	0	0	0	0	0	0	0
Blowers.....	rob	l	b	g	m	e	0	0	0	0	0	0	0	0	0	0
Briton.....	ovr	ml	b	vg	dkm	m	0	0	0	0	0	0	0	0	0	0
Eldorado.....	obl	vl	b	g	m	m	0	0	0	0	0	0	0	0	0	0
Erie.....	robl	l	b	g	m	m	0	0	0	0	0	0	0	0	0	0
King.....	obl	l	b	vg	dm	ml	0	0	0	0	0	0	0	0	0	0
Kittatinny.....	robl	l	b	vg	dm	ml	0	0	0	0	0	0	0	0	0	0
Mercereau.....	obl	ml	b	g	dm	ml	0	0	0	0	0	0	0	0	0	0
Snyder.....	obl	ml	b	vg	dkm	ml	0	0	0	0	0	0	0	0	0	0
Lucretia.....	oblov	vl	b	vg	dkm	e	0	0	0	0	0	0	0	0	0	0

## Plums

[KEY.—Form: c, compressed; f, flattened; ob, oblate; obl, oblong; ov, oval; r, round. Size: l, large; m, medium; s, small; v, very. Color: b, black; br, brown; g, green; p, purple; r, red; v, violet; w, white; y, yellow. Adhesion: c, cling; f, free; sc, semicling. Quality: b, best; g, good; p, poor; v, very. Use: c, curing; d, dessert; k, kitchen; m, market. Season: e, early; l, late; m, medium; v, very.]

NAME	Description							Recommendations for the several districts								
	Form	Size	Color	Adhesion	Quality	Use	Season	1	2	3	4	5	6	7	8	9
Arctic .....	rov	ms	b	sc	g	dk	m	00	0	...	0	...	...	...	...	...
Bradshaw .....	ovr	ml	pr	f	g	dm	m	00	00	0	0	...	...	...	...	...
Damson .....	ov	s	b	f	g	km	m	00	0	...	0	...	...	...	...	...
German .....	ov	sm	bp	f	g	edm	m	0	...	...	0	...	...	...	00	...
Golden Drop .....	ov	lvl	y	sc	g	edm	m	0	...	...	0	...	...	...	...	...
Grand Duke .....	ov	lvl	b	c	g	km	l	0	...	...	+	...	...	...	...	...
Green Gage .....	ov	m	gy	sc	g	d	m	0	...	...	+	...	...	...	...	...
Gueli .....	ov	m	bp	c	g	m	m	0	...	...	0	...	...	...	...	...
Imperial Gage .....	rov	m	yg	f	vgb	dm	m	...	...	0	0	...	...	0	...	...
Lombard .....	rov	ml	rv	c	g	km	me	00	...	...	0	...	...	00	00	...
Pride .....	r	l	p	...	g	km	...	...	00	...	...	...	...	...	...	...
Shropshire .....	ov	s	b	c	g	km	m	...	00	0	0	...	...	...	00	...
Yellow Egg .....	ov	vl	gy	...	vg	ck	...	0	00	0	0	...	...	00	0	...
Abundance .....	rov	ml	br	c	g	km	me	0	00	00	00	00	00	00	00	+
Burbank .....	re	l	rp	c	g	km	ml	0	00	0	0	0	0	00	00	+
Red June .....	ov	m	r	sc	g	km	ve	+	...	00	00	00	...	0	0	0
Wickson .....	r	vl	rp	...	vg	m	...	...	+	...	0	0	...	0	...	...



# We Have Two Hundred and Fifty Thousand Trees to Sell

See pages four and five for a complete description of all the varieties we grow

## WHOLESALE PRICE LIST SPRING 1914

This price list cancels all previous quotations. 5% discount is allowed on all orders sent us before March 1st., 8% if cash accompanies the order.

**IMPORTANT**—Less than 10. of a variety at single rates.

30 of a kind at 100 rates.

400 of a kind at 1000 rates.

	5 to 7 feet, 2 years				4 to 5 feet, 2 years				3 to 4 feet, 2 years				3 to 5 feet, 1 year			
	Each	10	100	1000	Each	10	100	1000	Each	10	100	1000	Each	10	100	1000
APPLE Baldwin, Ben Davis, York Imp. Northern Spy, Banana, Wagener.	\$.25	\$2.00	\$16.00	\$130.00	\$.20	\$1.50	\$12.00	\$110.00	\$.15	\$1.00	\$9.00	\$70.00	\$.20	\$1.50	\$11.00	\$100.00
ALL OTHER VARIETIES OF APPLES On pages 4 and 5.	.25	2.25	18.00	150.00	.20	1.50	13.00	120.00	.15	1.25	10.00	90.00	.20	1.50	12.00	111.00
PLUM	.25	2.00	19.00	170.00	.20	1.50	14.00	130.00	.15	1.00	9.00	80.00	.25	2.00	16.00	140.00
PEAR AND CHERRY	.25	2.40	22.50	190.00	.20	1.90	17.50	150.00	.15	1.35	12.00	100.00	.25	2.00	16.00	150.00
QUINCE AND DWARF PEAR					.20	1.90	17.50	150.00	.15	1.35	12.00	100.00	.25	2.00	16.00	150.00
APRICOTS					.35	3.00			.25	2.50						

PEACH, 1 year	4 to 6 feet, 15c each;	\$1.25 per 10;	\$10.00 per 100;	\$90.00 per 1000
	3 to 4 feet, 12c each;	\$1.00 per 10;	\$ 8.00 per 100;	\$70.00 per 1000
	2½ to 3 ft., 10c each;	\$ .75 per 10;	\$ 6.00 per 100;	\$50.00 per 1000

**Grapes** Strong two-year vines 10c each, 95c per 10, \$7.50 per 100, \$45.00 per 1000. SPECIAL PRICE—On the following varieties: Barry \$8.50 per 100, Brilliant \$13.50 per 100, Campbell's Early \$10.00 per 100, Duchess \$8.00 per 100, Gaertner \$8.50 per 100, Jefferson \$11.00 per 100, Victor \$8.50 per 100, Washington \$17.00 per 100.

**Currants** Two-year No. 1 plants, Price: 10c each, 70c per 10, \$5.00 per 100, \$40.00 per 1000. SPECIAL PRICE—On the following varieties: Black Champion \$8.00 per 100, Perfection \$15.00 per 100.

**Rhubarb** 2-yr. roots 15c each; \$1.00 for 10; 100 for \$8.50.

**How to Order**—Make up your list and send it to us before March 1st. You get 8% discount cash with the order before this date. We will reserve the trees for you for early spring shipment. Remit by personal check, money order, draft or registered letter.

**Gooseberries** Select two-year bushes. Price 15c each, \$1.00 per ten, \$8.50 per 100, \$80.00 per 1000.

**Blackberries** Price 40c per 10, \$2.00 per 100, \$18.00 per 1000.

**Raspberries** Strong, healthy plants. Price 50c per 10, \$1.75 per 100, \$13.00 per 1000. SPECIAL PRICE: Cuthbert \$10.00 per 1000, Golden Queen \$2.75 per 100.

**Strawberries** Price 75c per 100, \$5.00 per 1000.

**Asparagus** 2-yr. roots 65c for 50; \$1.00 per 100.



Order before March 1st while our assortment of varieties is complete, and get our 5% discount or 8% discount cash with order

# Ornamental Department

## Nut Trees

	Each	10	100
Am. Sweet Chestnut . . . . . 4 to 5 ft.	40c	\$3.00	
English Walnut . . . . . 3 to 4 ft.	50c	4.00	
Butternut . . . . . 4 to 5 ft.	40c	3.50	

## Shade Trees

<b>Elm</b>	Each	10	100
American . . . . . 8 to 10 ft.	50c	\$4.50	
Camperdown . . . . . 6 to 7 ft.	75c	6.00	

## Maple

Norway . . . . . 8 to 10 ft.	50c	\$4.50	
Silver . . . . . 8 to 10 ft.	40c	3.50	
Sugar . . . . . 8 to 10 ft.	60c	5.50	
Wier's Cut-Leaved . . . . . 8 to 10 ft.	50c	4.50	

## Catalpa

Bungeii . . . . . 6 to 8 ft.	75c	\$7.00	
Speciosa . . . . . 6 to 8 ft.	60c	5.00	

## Poplar

Carolina . . . . . 8 to 10 ft.	20c	\$1.80	\$15.00
Lombardy . . . . . 8 to 10 ft.	20c	1.80	15.00

## Birch

Cut-leaved Weeping . . . . . 6 to 8 ft.	60c	\$5.00	
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## Beech

Purple-leaved . . . . . 4 to 5 ft.	60c	\$5.00	
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## Mulberry

Tea's Weeping . . . . . 4 to 5 ft.	90c	\$7.50	
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## Linden

American . . . . . 8 to 10 ft.	60c	\$5.50	
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## Horse Chestnut

. . . . . 4 to 5 ft.	50c	\$4.00	
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## Tulip Tree

. . . . . 8 to 10 ft.	50c	\$4.00	
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## Willow Kilmarnock

Weeping Willow . . . . . 6 to 8 ft.	75c		
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## Climbing Vines

	Each	10	
Ampelopsis Veitchii (Boston Ivy) . . . . .	25c	\$2.25	
Ampelopsis Quinquefolia (Am. Ivy) . . . . .	25c	2.25	
Aristolochia (Dutchman's Pipe) . . . . .	50c	4.00	

## Clematis

	Each	10	
Henryii . . . . .	25c	\$2.00	
Jackmanni . . . . .	50c	3.50	
Paniculata . . . . .	35c	3.00	

## Wistaria

Chinese Purple . . . . .	35c	\$3.00	
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## Climbing Roses

	Each	10	
Crimson Rambler . . . . .	25c	\$2.00	
Queen of Prairies, red . . . . .	25c	2.00	
White Rambler . . . . .	25c	2.00	
Yellow Rambler . . . . .	25c	2.00	
Dorothy Perkins (shell pink) . . . . .	25c	2.00	

## Moss Roses

	Each	10	100
Blanche Moreau, white, Crimson Globe; Glacilis, deep pink; White Moss . . . . .	25c	\$2.00	\$18.00

## Tea Roses

	Each	10	100
Frau Karl Druschki, white; Hermosa, pink; La France, rose; Le Progress, golden yellow . . . . .	25c	\$2.00	\$18.00

## Hybrid Perpetual Roses

	Each	10	100
Coquette des Alps, white; Earl of Dufferin, crimson; John Hopper, rose; Magna Charta, pink; Rugosa Rubra, red; Victor Verdier, carmine red . . . . .	25c	\$2.00	\$15.00

## Flowering Shrubs

Althea; Deutzia Crenata; Deutzia Glacilis; Golden Leaved Elder; Weigela; Lilac; Calycanthus; Spiraea; Van Houttei; Purple Fringe Tree; Lilac, White; Hydrangea Paniculata Grandiflora; Upright Honey-suckle; Mock Orange; Snowball . . . . .	20c	\$1.85	\$15.00
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## Hedge Plants

<b>California Privet</b>	Each	10	100	1000
18 to 24 in. . . . .	5c	45c	\$3.00	\$25.00
24 to 30 in. . . . .	8c	65c	4.50	40.00

## Barberry Thunbergii

18 to 24 in. . . . .	20c	\$1.85	\$15.00
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## Norway Spruce

2½ to 3 ft. . . . .	25c	\$2.25	\$18.00
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# Terms and Conditions of Sale

**WE DO ALL PACKING FREE** and attach a New York State Certificate of Nursery Inspection to every box and bale leaving our Nurseries. We use our judgment in making shipment by Express or Freight unless instructions are sent us with the order.

**GUARANTEE OF GENUINENESS**—We exercise the greatest precaution to avoid any possible error in filling orders. An expert in distinguishing varieties checks each shipment before it is packed. *Should any trees not prove True to Name as represented by us, we will make good the buyer's loss by reason thereof at any time within ten years from the date of purchase. In event we cannot agree, we shall each appoint one arbiter, who shall choose the third, and the award of a majority shall be binding upon both parties.*

**TERMS**—Cash with order for which we allow a discount of 3%. This makes 8% discount cash with the order before March 1, 1914. Those who do not wish to pay cash may send one fourth of the amount cash with the order, and we will enter the same and ship the trees C. O. D. in the spring.

**REFERENCES**—The Merchants and Farmers National Bank, Dansville, N. Y.; any Business or Professional Man, Dansville, N. Y.; Citizens Bank, Dansville, N. Y.; Publishers of The Rural New Yorker, New York City; Publishers of Farm Journal, Philadelphia.

**King Brothers Nurseries**  **Dansville, N. Y.**  
Established 1878 One Hundred Acres



# King's Fruit Tree Bulletin

ISSUED QUARTERLY AT DANSVILLE, N. Y.

SUBSCRIPTION PRICE 25c FOR THREE YEARS

PUBLISHED BY

King Brothers Nurseries

Our Motto

*"Hold the Mirror up to the Truth"*

MARTIN KING, JR., EDITOR

*"An apple a day will keep the doctor away."*

Are you a subscriber to King's Fruit Tree Bulletin? We are very anxious to have you. Read our splendid offer on page 12.

Guaranteed trees true to name! Have you ever seen this in large type on the front page of a nurseryman's catalog? But did you notice the clause on the inside in small type which reads something like this: "We will replace the trees free of charge in case they do not turn out as we represent them." What a misuse of the English language!

Prof. U. P. Hedrick of the New York State Agricultural Experiment Station, who contributes the long article on "Specifications for Successful Fruit Growing" in this issue is the first authority on fruit culture in the United States.

The fruit tree agent gets a commission of from 25% to 35% on all orders he sends to his company. Your friends should know about this. In fact, some of these tree agents do not represent a reliable nursery at all, and yet they take millions of dollars away from our country people every year.

Every man who owns even a few trees should spray them. It's cheap and it pays wonderfully. Read all about spraying equipment on the next page.

You do not read so much about trees propagated from bearing orchards in some nurseryman's catalogues lately. Most of them never cut their scions from bearing trees as they proclaimed. They misrepresented their trees. Some of them are doing it yet. We told the truth about this matter in our series of articles in The Rural New Yorker on "The Story of a Tree." These articles afterwards appeared in King's Fruit Tree Bulletin. Do not fail to read what Professor Hedrick says about "pedigreed trees" in his article in this issue.

Varieties of trees do not get better or worse from one generation to the other. If you cut scions from a Baldwin tree, whether old or young, the little tree you produce will be Baldwin and the quality of this Baldwin tree will depend absolutely on the soil and climate in which it grows and the care it receives. The same is true of any other variety of fruit. If we nurserymen cut our scions from young

thrifty trees, we will get a better stand of buds and the trees will grow better and show more vigor than if we attempted to use scions from old bearing trees.

In some ways, we are pretty much like our ancestors. If we read the inscriptions on the Babylonian bricks made three thousand years before the time of Christ, we will find evidence enough to convince us that human nature has not changed. Men are still moved by the same passions that stirred the men of five thousand years ago. There seems to be evolution of some kind, we are growing better and wiser in many respects but we are still on the planet, earth, and subject to its laws.

Science has taught us, however, that the things men feared in the olden time are not the worst enemies of man. In those days men trembled at the sight and even the thought of the monsters of the earth and of the deep. But now we have no fear of these big things. We go out and hunt for them and bring them alive and cage them in our menageries. The living things that are so small we cannot see them with the naked eye, the microbes, the germs that destroy us, are the things we now fear.

We will never forget the experience we had last summer with one of the worst enemies of the fruit grower. We sent to New Jersey for some scions of a particular new variety of peach that we wanted to propagate and, when they arrived, we called the nursery inspector who resides in Dansville to examine them. It is known all over the country that Dansville is absolutely free from San Jose Scale. Never has one of these pests been found here. They reproduce their kind by the millions and millions and only a few of them might infect all the nurseries here if they once got a foothold. The inspector went over every scion one by one and we had nearly examined all of them when he discovered what seemed to the naked eye to be a little speck on the bark near the leaf stem. He took out his big magnifying glass and sure enough it was San Jose Scale. With the point of a knife he lifted the shell and there we could see the animal itself hard at work, and around it were several of its young that had just been in existence a short time.

Only one block away was our field of 150,000 seedlings and if, through ignorance, we had used these scions, what havoc would have been wrought! We lost no time in kindling the fire and scions, wrappings, tags and all were soon in ashes.

Editor B. H. Knapp of the "Dansville Daily Breeze," and Ex-mayor of Dansville, Mr. C. A. Snyder, who has been in charge of the Lackawanna depot at Dansville for over thirty years, have both said some nice things about us which we invite you to read. We will just explain that to get freight to the Lackawanna we have to haul one and one-half miles up a steep hill from our packing house while we would only have to load them right on the cars, if we used the Dansville & Mt. Morris R. R. We have heavy teams to draw our loads of trees up the hill. We advise all planters who buy Dansville grown trees, even if they do not deal with King's to order their trees shipped over the Lackawanna.

## Nursery Business Flourishing in Dansville

From Dansville Daily Breeze, Dec. 18, 1913

The Editor passed a pleasant hour with Martin King, Jr. in the offices of King Brothers Nurseries in the Citizens Bank building yesterday. We dropped in to muse over reminiscences of High School days, but Mr. King took the occasion to tell us some interesting things about the nursery business. He explained to us the methods that our nurserymen have for handling the immense amount of correspondence that pours into them from people all over the United States who wish to buy Dansville grown trees.

We had supposed heretofore that all the mail order business of our nurserymen was done here in the east, New York, New England, Pennsylvania and the Jersey Coast but Mr. King showed us orders from as far west as Albuquerque, New Mexico. Very large sales are made in Michigan, Ohio and Indiana, in fact, planters everywhere are learning by experience, he said, that Dansville grown trees are the best they can buy. This will mean that the 125 wholesale growers in this town will experience an increased demand for their trees from year to year.

Until the Dansville & Mt. Morris R. R. is extended to Hornell so that more rapid transfers of freight can be made and congestion and delay of shipments at Avon and Rochester put a stop to, Mr. King says that all freight shipments of King Brothers Nurseries will be hauled up the hill to be shipped over the Lackawanna. This railroad, he says, gives the fastest service of any line in the country.

We were shown an article in Country Gentleman, written by Prof. Samuel Fraser of Geneseo in which he tells about the remarkable growth of the fruit industry on the Wadsworth Farms. Mr. King says there is no reason why this same progressive spirit and enterprise could not be introduced here with great financial gain to landowners who have splendid sites for orchards on the undulating hills surrounding Dansville where the land is not suitable for nursery.

Mr. King is a recognized authority on all matters pertaining to horticulture. He has made a special study and investigation of the adaptability of varieties to different soils and climates and any one intending to plant trees in this section would do well to consult him.

## Ex-Mayor Snyder's Letter

December 15, 1913

King Brothers Nurseries, Dansville, N. Y.  
Gentlemen:—I have been handling your freight and express shipments ever since the Kings began to sell trees direct to the planter. I even did business with your father before you were born, over thirty-five years ago. It is a pleasure for me to note the great growth in your business, and I want to tell you that every shipment you sent up to me this fall was billed right, as usual, and packed in a most thorough manner. We moved every shipment off the day it was received here and rushed it through. I am glad to hear from you that every box reached its destination on time and in good condition and that your customers are all pleased.

I assure you that your future shipments will receive the same careful attention by the Lackawanna as they have received in the past. Your reputation for sending out only the best Dansville Grown trees and the splendid shipping facilities we give you is bound to bring you ever increasing sales from every quarter of the country.

Wishing you continued success even beyond your expectations, I am

Yours very sincerely,

C. W. Snyder,

Agt. D. L. &amp; W. R. R. &amp; U. S. Ex. Co.



# WE MANUFACTURE SPRAYING MACHINES OF ALL KINDS

BUCKET, KNAPSACK, BARREL, TRACTION, GASOLINE ENGINES AND GASOLINE MACHINES  
HERE ARE SOME VERY POPULAR TYPES.

## The New Watson

One of our Combination Potato, Orchard and Weed Sprayers that will appeal to you if you are looking for an "all around" machine.



We can't say very much about it in this limited space but just notice the Spray Boom with its 8 nozzles, 2 to each row.

For hand pumping in orchard work simply remove one bolt, insert hand lever and connect discharge lead of hose in place of spray boom. Ask us more about it.

We also have an excellent Gasoline Machine, The LEADER-TRIPLEX, with a 3½ H. P. engine for more extensive work and if the engine is desired for sawing wood, and other heavy power purposes, aside from spraying, we advise this machine.

Again we have a cheaper Gasoline machine for small orchards where it is desired to do the work by power instead of by hand. It will pay you to investigate the merits of this machine—our EMPIRE LEADER, Fig. 1850. **Complete Catalog Mailed Free Upon Request.**

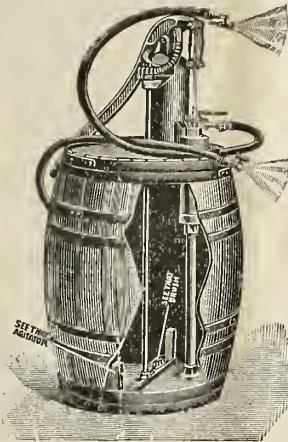
**Special Offer:** With each Power sprayer ordered before May 1, 1914, whether Traction or Gasoline, we will send with it a copy of our Handsome book, described below. It will pay you to own a copy. The usual price is 50c postage paid.

For a COMPLETE set of Formulas and detailed Spray Calendar, with important information relative to modern orchard practice, including budding, grafting, pruning, cultivation, fertilization, etc., the growing of small fruits, potatoes and other vegetables, cotton, ginseng, tobacco—the Spraying of shade trees and green-house plants, etc., consult our handsome new book, **The Why and How of Orchard Success Only \$0.50 postage paid.** This treatise is concisely compiled for ready reference with complete indexes and cross indexes, and whether you have but a small garden or an extensive commercial orchard you cannot afford to be without it.

**FIELD FORCE PUMP COMPANY,**

**Elmira, N. Y.**

## The Empire King



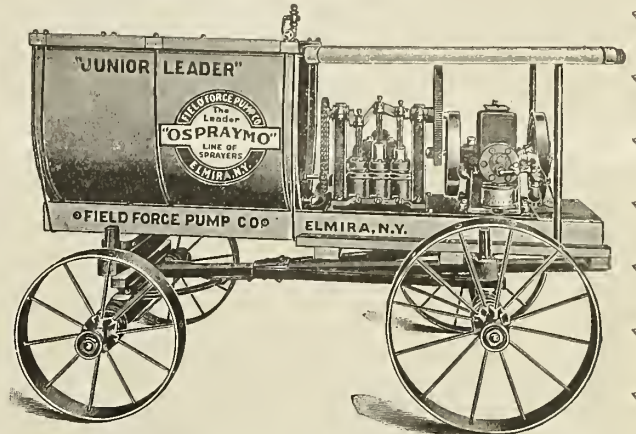
The BEST Barrel Sprayer in all the world.

Has our famous Mechanical Agitator and Automatic Brush for keeping liquid and poison thoroughly mixed, so that all the

foliage gets an equal portion of poison. No clogged pipes or nozzles with this pump. Has all brass working parts and will give the highest degree of satisfaction.

## The Junior Leader

If your orchard is large here's the machine you want Superior to anything of equal capacity on the market.



Has 2 H. P. engine, Triplex pump—both of these assembled on a steel plate to insure perfect alignment. Has revolving mechanical agitator and Automatic Brush. Mounted on a STEEL Frame.

# Reasons for Spraying the Orchard

*Orchardists Spray Because they have to if they want Any Fruit at all that will Sell*

**W**HY do we spray? Well, to be candid and truthful it is because we are obliged to spray, otherwise our apples will be of such poor quality, if we have any, that we get nothing for them. In other words we spray because it pays. If we don't the fungus and worms injure both leaf and fruit, the leaves and fruit fall from the tree prematurely and when picking time comes around there is no fruit to pick as it has fallen to the ground and the foliage also has dropped off, while it is yet summer and the fruit buds for the next year are undeveloped.

The buds for this spring's bloom were developed and grown last year during the summer and autumn months. In the fall, if the tree has good foliage and the cultivation has been good there is stored up in the buds and the tissue of the bark plenty of plant food to start the buds into a strong healthy growth in the spring. Therefore it is important to spray on account of the present year's crop and because of the development this year of the crop of buds for next year's fruit.—H. M. Dunlap.

(From the "Journal of Agriculture and Star Farmer")

## A SPRAYING EXPERIENCE

### Remarkable Effect of Spraying

The most remarkable effect of spraying I ever saw was on some young Green Gage plum-trees last summer. There were six trees all of same age and variety, all of nearly same size and all equally full of bloom. After the bloom had dropped and the husks on calices were about all off (May 6th) I sprayed with the self-boiled solution given above.

When I had sprayed the other plum-trees and five of the Green Gage trees my spray solution gave out, and so I decided to leave the one tree as a check on the others to note the effect of the spray. It looked as promising then as the other five trees.

On May 31st I again sprayed the five with same formula, again leaving the one tree unsprayed. At this

date there was a difference, more stung fruit being on the unsprayed tree. This was all I sprayed, but they would have been much better for a spraying in July, as some trees lost some fruit just before ripening, from brown rot caused by so much dry weather.

When we harvested the crop in mid-August we got, from the five trees, over seven bushels of fine plums, with scarcely a faulty one.

On the test tree, not sprayed, the plums continued to drop till about two weeks before picking time, when the last one, all covered with wax, dropped off, and we did not get a single plum from it. Such an experience is more convincing than bushels of talk.—JAS. D. BOWMAN.

(From "Farm and Fireside," July 13)

## Efficiency of Liquid Spray

"The methods of spraying plants naturally divide themselves into two groups, viz:—

- (1) Liquid Spraying and
- (2) Dust Spraying.

In a general way it may be safely stated that the dust form is not as efficient as the liquid, and the difference in efficiency is enough to make it worth the extra trouble necessary to employ the liquid form under all circumstances.

The difficulty with the dust spray is in getting it to stick to the foliage and fruit. It must be applied while the foliage is damp, either soon after a rain or while the foliage is damp with dew. Advantage cannot often be taken of the former condition hence one must usually rely on getting the dust spray on very early in the morning or late in the evening. In either case it will be out of the regular working hours and therefore disagreeable.

The wind also interferes much more with the application of dust sprays than with the liquid form.

Another reason for the comparative inefficiency of dust sprays—especially dry Bordeaux mixture—is that the dry form can never be obtained in as finely divided

condition, whether prepared at home or in the factory, as in good, home-made liquid sprays. This means that an equal or even greater quantity of the dust form cannot be as thoroughly distributed over a given amount of leaf surface as can the liquid form, and hence will leave more unprotected spots through which disease or insect pests may enter. (See Me. Agr. Expt. Station Bulletin No. 149, December 1907, for a more exhaustive study of the comparative value of the liquid and dust sprays.)

We also quote the following from a letter received from Prof. R. D. Anthony of the N. Y. State College of Agr., Ithaca, N. Y., viz:—

"Your letter to the Expt. Station, relative to dust sprays, has been referred to me for answer.

At present, I do not think there is a single Experiment Station advocating dust sprays for our northern fruits, that is, the apple, pear, peach, plum and grape, nor is there immediate prospect of their doing so. This station is at present studying the application of certain sprays as a dust on hops, and also experimenting in a small way in applying these sprays to the orchard trees, but no results on the orchard trees have as yet been secured.

I think you are perfectly safe, and will have most experimenters back of you, in saying that at present, at least, the liquid sprays are the best for our common fruits."

Again from Prof. C. A. McCue, of the Delaware College Agr. Expt. Station, viz:—

"In reply to yours of the 9th inst. regarding dust sprays vs. liquid sprays, I will state that where water is easily available I would not for an instant recommend to any one that they use a dust spray in preference to liquid sprays.

While we perfected a good method of manufacturing and applying dust sprays and used them for three years in the orchard of one of the largest fruit growers in this state, he was not enough convinced of their merits to abandon liquid spraying, and as far as I am able to ascertain he has never attempted to use the dust spray other than in an experimental way."



## Successful Fruit Growing

(Continued from page 1)

and at what distances apart? Planting in squares is best because it permits orchard operations to be carried on most readily. Both roots and branches will utilize all of the space. Fillers of fruits other than varieties of the same species as the permanent trees are not desirable, since they greatly complicate orchard operations. Fillers of quick bearing varieties of the same fruit, especially the apple, may often be used to advantage. There should be as many "outside rows" as possible. That is, the trees should be far enough apart for each to develop in full its individuality, as the trees on the outside of the orchard produce most fruit, since they get most air, sunshine, wind, moisture and food.

### "IMPOTENCY"

Fruit does not set for the most part because of frosts, cold weather, rains and heavy winds at blooming time; but still there are some varieties of pears, apples, grapes and plums that are self-sterile. The remedy is mixed planting of varieties that bloom at the same time. It is important that the fruit of all of the varieties planted have value as it is not worth while to encumber land with a sort fit only for a pollinator. Contrary to a very general notion the fruits themselves are not greatly changed, if at all, by cross-pollination.

### TIME AND AGE TO SET

There is a marked gain in setting varieties of apples late in the fall if the trees be two-year-old. All other fruits and one-year-old apples should be set as early as possible in the spring. Two-year-old trees are usually to be preferred to those but one year old if they have been properly headed in the nursery. With the peach, one-year-old trees should always be planted.

### DYNAMITE

There is little positive evidence to show that trees thrive better in holes made by using dynamite, and until such evidence is forthcoming it is better that the holes be dug, as it is quite as probable that harm rather than good will be done through the use of explosives.

### TOP-WORKING

The practice of setting a thrifty variety of apples or pears and grafting or budding a weaker or less healthy variety wanted, has many advocates. This top-working is probably a procedure worth while with a very few varieties. In general, however, the chances of getting malformed, lop-sided trees and of delaying the bearing period are so great that top-working cannot be recommended except for a very few sorts that seem difficult to grow on their own roots. They can be best top-worked in the nursery.

### PRUNING AT TRANSPLANTING

We are ready to set the tree and the problem of pruning is before us. It is necessary to cut away part of the branches to enable the injured root system to supply the remaining branches with water. The less the roots are injured the less the top need be cut away. The common way is to cut back all of the branches. This, in many cases, is wrong. The top buds on a branch develop soonest and produce the largest leaves. A newly set tree will grow best if it can develop a large leaf surface before dry, hot weather sets in, and this it will do if some branches are left intact. Therefore, instead of shortening-in all branches, cut away some of the branches entirely. The tree so pruned will start growth and acquire vigor more quickly.

### HEIGHT OF HEAD

A choice must be made at the start as to the height of the head. The choice should usually be for a low-headed tree for the reason that such a tree is more easily sprayed and pruned

and the fruit more readily thinned and harvested; crop and tree are less subject to injury by wind; the trunk is less liable to injury by sunscald, winter-killing and parasites; the top is more quickly formed and the low-headed tree soonest bears fruit. No advantage as to cultivation is gained by either method over the other, as a well trained tree with a low head, in which the branches ascend obliquely, permits the cultivator to come sufficiently near the tree. By low-headed is meant a distance from earth to the first limb of from one to two feet. The peach may be headed at the lower distance, the plum, pear and cherry somewhat higher, while the apple should approach the upper limit.

### FORM OF HEAD

Two general types of top are open to choice; the vase form or open-centered tree, and the globe or close-centered tree. In the first the framework of the tree consists of a short trunk surmounted by four or five main branches ascending obliquely. In the close-centered tree the trunk is continued above the branches, forming the center of the tree. There are several modifications of each of these. In New York state, the open-headed vase formed tree is best for the peach, and the close centered two story tree is best for all other fruits. Whatever the form, care should be taken that the lowest branches are longest, so that the greatest possible leaf-surface will be exposed to the sun and light.

### PRUNING FOR WOOD

For several years after planting, the peach alone excepted, fruit trees need to be pruned only to train the tree. Just how much to prune young trees depends upon the fruit, the variety, the soil and the climate. Fruit-growers usually prune trees too much, thereby increasing the growth of wood and delaying the fruiting of the plant. If trees were originally well selected, all that is needed is to remove an occasional branch which starts out in the wrong place—the sooner done the better—and to take out dead, injured or crossed limbs. The peach, some plums and some pears may need heading-in, and a weak, or sickly tree may require somewhat more severe pruning.

If a tree is bearing many small fruits, if the top contains dead or dying branches, or if the seasonal growth is short and scant, it may be taken for granted that the tree lacks vigor; or, in old trees, is passing into decrepitude. Such trees may usually be rejuvenated by judicious pruning. In professional terms the tree must be "pruned for wood." Such pruning consists in cutting back a considerable number of branches and in wholly removing others. In pruning for wood the following rules are usually applicable:

Weak-growing varieties may always be pruned generously; strong-growing kinds, lightly.

Varieties which branch freely need little pruning. Those having unbranching limbs should be pruned closely.

In cool, damp climates trees run to wood and need little pruning. In hot, dry climates they need much pruning.

Rich, deep soils favor growth; prune trees in such soils lightly. In shallow, sandy soils, trees produce short shoots, and the wood should be closely cut.

### PRUNING FOR FRUIT

A barren tree can sometimes be made to bear fruit by proper pruning. Not infrequently barrenness is caused by over-manuring or over-stimulation of some kind, because of which the number of shoots and leaves are greatly increased, but flower buds do not form. This over-production of wood and leaf can sometimes be stopped by breaking or cutting off the greater portion of the season's growth in the summer. Summer pruning is a weakening process and may greatly decrease the

vigor of the plants if frequently resorted to. The practice is neither common nor often necessary in New York state except in the case of dwarf apples and pears.

### PRUNE ACCORDING TO HABIT

In pruning, the habit of the tree must always be considered. When trees have a spreading, drooping, or long, slender habit of growth, prune to buds that point upward or to the center of the plant. If the habit be upright and dense, cut to lower or outer buds and so spread the compact top. The "off-year" habit of bearing is intensified by spadmodic and severe pruning. Prune biennial bearers rather conservatively and early. The heads of all young trees may be left fairly dense, for when the trees come in bearing, the weight of the crop opens the head; meanwhile, by saving the foliage you have obtained a larger trunk and more bearing wood.

### HEADING-IN

Heading-in makes the top of a tree thicker and broader. There are but few orchards or even trees that do not need more or less heading-in at some time in their history. But in our New York climate this form of pruning is practiced only with peaches and some plums, and is but little needed with other fruits. In winter pruning, the cutting back of exceedingly long branches for the thickening of the top of occasional trees or varieties is the exception rather than the rule. Peaches and some plums bear fruit on the wood of the past season. The crop is borne progressively away from the trunk. It is necessary to head in these fruits to keep the bearing wood near the trunk. Apples, pears, most plums, and cherries are borne on spurs from wood two or more years old, and, therefore, with these heading-in is not a regular practice.

### SUCKERS

When a tree is severely pruned a growth of long, vertical shoots with few leaves often follows—suckers or water sprouts. Since the sparseness of foliage prevents the shoots from elaborating food they appropriate it from the parts upon which they grow. Suckers are, therefore, parasites, and should be removed whenever and wherever found. Occasionally they may be used in the development of normal branches, though their value for this purpose is small.

### THE CUT

The cut in pruning should always be made parallel with the trunk, as close as possible, and just beyond a healthy lateral branch. The reason for so cutting is plain. The lateral branch is stimulated to produce a great number of leaves which assimilate sap. This elaborated food passes back through the inner bark near the newly made cut and the wound quickly calluses and heals because it thus has access to an abundant supply of food.

Wounds over three inches in diameter seldom heal; decay sets in and there soon follow rotten wood, a hollow branch and a diseased tree. The life of a tree is endangered whenever a large branch is removed, and such an amputation should be made only under dire necessity. One of the secrets of the healing of large wounds is to cut close to the trunk, and no matter how large a wound may be it is better than leaving a projecting stub. The chances for healing with a large wound are materially increased by a coating of thick lead paint to protect the cut surface from evaporation and moisture.

### TIME TO PRUNE

The best time to prune is late winter before the sap flows. The objection to early winter pruning is that there may be injury to the tissues near the wound from cold or from checking. Late spring pruning results in loss of sap and the fluids run down the bark and keep



it wet and sticky, making a suitable place for the spores or various rot fungi so that decay may set in. In practice it is often found necessary to prune from the time leaves drop until they are well started in the spring.

#### CULTIVATION

Cultivation is generally practiced with all fruits except the apple. Some claim that this fruit can be grown better in sod; in which case the grass may be cut as a mulch or it may be kept down by sheep, pigs or cattle. The New York Agricultural Experiment Station has two experiments to test sod and cultivation.

Allowing 27.2 trees to the acre, one experiment showed that the average expense of production, including picking and marketing, was \$53.75 an acre annually under the sod-mulch system and \$76.06 under tillage, an advantage for the sod-mulch of \$22.31 an acre; but the *net income* from an acre in sod was \$71.52 and from an acre in tillage \$110.43, an advantage for tillage of \$38.91. That is, every dollar of the additional expenditure (\$22.31) made necessary for adopting the tillage method was not only returned but brought an extra \$1.74 of profits with it.

#### FERTILIZERS

Is it necessary to fertilize an apple orchard? In the average western New York tilled apple orchard, if it be well drained, well tilled and properly supplied with organic matter from stable manure or cover crops, commercial fertilizers are little needed. The exceptions will probably be found on sandy and gravelly soils deficient in potash or the phosphates, and subject to droughts; or on soils of such shallowness or of such mechanical texture as to limit the root range of the apple plant; or in soils so wet or so dry, or so devoid of humus, as to prevent proper biological activities in the soil. There are probably many apple orchards in the country that may be benefited by an application of one of the chief elements of fertility. Some may require two of the elements. Few, indeed, should require a complete fertilizer.

How may a fruit-grower know whether his trees need fertilizers? It may be assumed at once that if trees are vigorous, bearing well and making a fair amount of new wood each season, they need no additional plant food. If the trees are not in the healthful condition described, the logical thing to do is to look to the drainage, tillage and health of the trees first and the more expensive and less certain fertilization afterward.

As a last resort, fertilizers ought not to be used to rejuvenate trees unless the owner has obtained positive evidence that his soil is lacking in some of the elements of plant food. To obtain such evidence a fruit-grower should carry on a fertilizer experiment.

In making such a test, select a portion of the orchard as uniform as possible, both in soil and varieties. If available, use at least five trees for each plot and on different plots use fertilizers about as in this Station test: (1) Acid phosphate to give about 50 pounds of phosphoric acid to the acre, or 13 pounds of 14 per cent phosphate to each tree if they stand 40 feet apart; (2) phosphate as above and muriate of potash to give 100 pounds of potash to the acre, or 8 pounds of muriate per tree; (3) phosphate and muriate as above and nitrate of soda and dried blood to give 50 pounds of nitrogen per acre, or 13 pounds of medium grade dried blood and  $2\frac{2}{3}$  pounds of nitrate of soda per tree. This nitrogen might also be supplied in six tons of good stable manure to the acre, or 400 pounds per tree; (4) this amount of stable manure should be applied on a fourth plot, and (5) a similar plot should be left unfertilized for a check. This experiment is much less laborious and complex than it looks, for the fertilizer combinations are built up one from another and the mixing can be done and quantities weighed out in winter when orchard work is not pressing.

The fertilizers should be applied in the spring as soon as the ground can be worked, spreading them about the trees over an area somewhat greater than that covered by the spread of the branches. Apply the manure before plowing, and the fertilizers immediately after it, harrowing them in. The experiment, to be conclusive, should run for several years and the crops should be carefully weighed or measured, giving due consideration to culls and windfalls.

#### INTER-CROPS

The best modern practice permits the growing of hoed crops in an orchard until the trees come into bearing. If profitable disposition can be made of the product, truck crops are ideal for a young orchard. Of these peas and beans take less from the soil than other crops and may add a little nitrogen to it. But beside these, cabbage, potatoes, cucumbers or similar crops may be grown advantageously. Corn is the only farm crop permissible and is not as desirable as any of the truck crops named.

#### COVER CROPS

The best modern practice insists that a cover crop be sowed at the close of the season's cultivation, about August first, to be plowed under the next spring. Various crops may be sown alone or in combinations. The several purposes of a cover-crop—to cover the ground, and add humus and nitrogen—are usually best served by a combination crop. Of several that may be recommended, this Station prefers the following: On each acre sow one bushel of oats or barley and fifteen pounds of mammoth red clover or thirty pounds of winter vetch.

#### PESTS

Spraying is indispensable but the fruit-grower can so plant as to avoid some of the warfare with pests. Thus King, Roxbury and Northern Spy among apples are nearly free from scale as are the Kieffer, LeConte and Winter Nelis pears, Bradshaw and Field plums and all sour cherries. There are about thirty varieties of apples on the grounds of the New York Agricultural Experiment Station never injured by scab as many more scarcely injured, and of course a large number that are badly injured. The Seckel, Kieffer, LeConte and Winter Nelis pears do not blight badly. A few plums are never attacked by black-knot and some peaches are almost immune to leaf curl. Now with these, and nearly all other pests, men who cannot or will not spray, the general farmer and the city suburbanite, for example, should plant varieties measurably immune to the most troublesome pests. Commercial fruit-growers must spray.

#### MICE AND RABBITS

It is necessary to protect young trees from mice and rabbits. The best protection against mice is a mound of earth about the tree several inches high, thrown up in late fall and removed in early spring. Wire netting is the best protection against rabbits. When injury has been done the trees can often be saved by bridge-grafting.

#### CONCLUSION

Fruit plants are various in kind and trees of one kind are often quite unlike because the conditions under which they are grown are dissimilar. It follows, then, that conditions must vary for every person who grows fruit and that there must, therefore, be more or less diverse ideals, diverse methods and diverse results. But certain forces, embraced in what we call "good care," have brought all fruits from the wild to their present state of domestication, and these forces modified and refined as we gain new knowledge, must be kept in constant operation.

## Health

Our health is a most precious thing and we can lose it so easily. There are three splendid rules for conserving our health. Worry about things that will never come to pass does infinite harm to us. If you will look back on your life carefully, you will discover that the things that worried you the most a few months or years ago are not on your mind at all now. But you have something else to worry about. This is folly. It hurts you, mind, soul and body. It shortens your life. We would live so much longer and get along so much better if we would stop worrying and do the best we can, take what comes cheerfully, act the best we know how each day and leave the rest to the Powers that rule the world.

Some people have only one object in life and their mind is on this one thing all the time. It's well, of course, to have constancy of purpose and singleness of purpose, but all men and women should so arrange their lives as to have at least two important interests. Our brain has parts like anything else and one set of brain cells work all the time that we are thinking of one thing. They rest and another set starts work when we turn our mind to another subject. Dr. Walsh, the great nerve specialist of Fordham University, says that some of the greatest men of our time follow this method of having at least two very important interests in life. He believes that it accounts for the long life and vigor of many of them. It is easy to practice it. For instance, the banker in the city could buy a little farm, plant it to fruit and become so interested in it that he could get away from his bank and his stocks and notes and go out and really rest his mind by giving his thoughts entirely to the problem of growing better fruit. He would come back to the bank rested and refreshed. The farmer's wife perhaps has too many interests as it is without looking for more, but what a rest and delight it would be for her, for instance, to take up a study of roses and make a collection of all varieties under the sun and know all about roses. Any other hobby would do just as well. The fruit grower could go into politics as the second great interest in life. The New York State men will smile at this, but just the same, the old state needs them as much as any state in the union. A man wants to be so evenly balanced, however, that when he does go into politics, he will not forget to spray his trees on the right day.

Another great means of conserving our health is attention to our diet. Don't be fussy about what you eat but have a variety. Eat plenty of vegetables and fruit. Some of our country people especially pay dearly for their neglect to provide themselves with a good variety and supply of fruit and vegetables. The markets are far away and too often, during the winter months, it's just buckwheat pancakes for breakfast, pork and potatoes day after day. This hurts the system. For a few dollars invested in seeds, plants and trees, and a little thought and care, enough fruit and vegetables could be raised on an acre of land to have a splendid variety of things on the table for a large family the year around.

Contrary to the general belief, it is important to take plenty of time to eat our meals and to masticate vegetables thoroughly, even more than meat, to render them digestible.

Nature's laws are inexorable. If we violate them, we shall pay for it sooner or later. A little timely attention to these things may mean everything to you. Think about it.

Young people and those in the full possession of health often pay no attention to the simplest rules of right living, thinking that their rugged constitution can stand anything. Over work, over study, over play, over indulgence injures the strongest constitution and leaves its everlasting mark.



# CO-OPERATION

**THE SLOGAN OF THE 20th CENTURY**

**A Confidential Talk with my 25,000 Readers**

BY MARTIN KING, Jr.



**D**O YOU KNOW it was the great poet Byron who said: "Actions are our epochs." How true this is. Now I want to tell you a little of my personal history. When I came home from college a few years ago, I was given the job of selling our trees. Up to this time, our trade was quite largely among the big retail firms and dealers in trees throughout the country. They bought of us at very low prices, say 12c each for apple trees, and resold them to their customers for sometimes as high as 75c per tree. All kinds of mixtures occurred in handling the trees so many times and shipping them from one nursery to another. It was not a square deal for the planter or for us. I had studied the situation from every angle. We must stop this and sell direct to the planter, I said. But how to do this. It was suggested that we employ agents and let them canvas from house to house throughout the country. But look at the expense! It costs three times as much to sell trees that way as it does to produce them. Then it was suggested to buy up a big mailing list and put out a fancy catalog. That did not appeal to me so I turned that plan down also. I wanted something more, something better, something that would bring our firm closer to our customers, something that would be a credit to King Brothers: a help to its patrons, and something that would enable us to sell trees at the lowest possible mark. In spite of all objection, I began the publication of this quarterly Bulletin. The first issue consisted of about 1000 copies. It grew in circulation every year. Customers came to us from every quarter of the United States. Today our mailing list numbers 25,000 names; and I have not finished yet. Horticulturists and orchardists everywhere are agreed that I have met the demand of intelligent men who need trees. Our Bulletin is concise, scientific, up-to-date, and presents the facts of the nursery business in a way that no agent or catalog can or does. It is a standard authority for every man interested in fruit culture.

It needs just one more improvement; and here is where I ask your assistance. I want to send it only to people who care about trees. You will agree with me surely when I say that it is a most fair and liberal plan to charge 25c for the paper for three years. Just see what this will mean. We can drop then from our mailing list those who do not subscribe because we will know that they are not interested. We will thus reduce the cost of selling because there will be no waste of money in distributing our paper. This advantage will go to our customers in reduced cost of trees, for remember that *customers pay for every item of expense that a firm incurs unless it is a mushroom get-rich-quick concern that goes out of business in a year or two.*

If my Bulletin appeals to you, therefore, and you want to receive it quarterly for the next three years, you will surely take advantage of offer No. 1 which I am making you on this page. If you are kindly disposed to help your friends who need trees, you will take up my offer No. 2.

Never before in the history of the world were the rewards greater or the prospects brighter for the men who till the soil. There are about ONE HUNDRED MILLION people in this country now and the more fruit they consume the happier and the healthier they will be. This is a grand, glorious work, raising fruit to feed the millions. I am appealing to every young and middle aged man in the country who has energy, ambition, courage and vision to interest himself in the work. "Actions are our Epochs". Do it now.

## OFFER No. 1

Here is a little the best offer I have ever made to my 25,000 readers.

I will mail you two beautiful 2 year old grape vines, one a big productive dark red variety and the other a luscious white table grape, just what you want for some corner of your fruit garden, or for some back porch or trellis, and send you Kings Fruit Tree Bulletin quarterly for three years for 25c. This offer holds good till March 1st, 1914. I will send you some lovely vines, better than you would get from the fruit tree agent for 75c. Just act right now. Send me 25c in a strong envelope with your name and address. Uncle Sam's employees are all honest and it will reach me safely.

Address MARTIN KING Jr., KINGS FRUIT TREE BULLETIN, Dansville, N. Y.

## OFFER No. 2

Good only until March 1, 1914. I want to pay you a splendid price for getting ten three-year subscriptions to Kings Fruit Tree Bulletin for me. You can do it with the least effort. Just call up ten friends on the telephone who are interested in fruit growing and ask them to subscribe. They will all do so. I will mail each subscriber, whose

name and address you send me, two grape vines early in the spring and King's Fruit Tree Bulletin quarterly for three years.

And ship you as a premium for your trouble and kindness in sending me the \$2.50 for the paid in advance subscriptions

**10 FRUIT TREES**—Assorted varieties of whatever kind you prefer. **5 GRAPE VINES. 5 CURRANTS.**

This will be a fine collection of trees and plants that you could not buy from a wandering fruit tree agent for \$5.00. You will be proud of the little fruit garden it will make you when you get the trees and see them all flourishing next summer. This is a co-operative plan for our mutual benefit. It will mean a fine bill of trees for you FREE. It may introduce us to several men who some day might plant 1000 trees each under our direction. It requires just a little effort on your part. You are not asking your friends for a favor. You are giving them a big bargain. You are helping them. Act on the impulse now and send me ten subscriptions for \$2.50.

Address MARTIN KING, JR., KING'S FRUIT TREE BULLETIN, Dansville, N. Y.